# Education in Chemistry - Index 1989

## Subject


16-19 science, Royal Society meeting, 38C
16-plus action plan in Scotland, 83
2066 competition, 99C

A-level chemistry, 171
A-level core, RSC, 163C
ASE, Birmingham, 35C
Audiovisual reviews
  Film and video appraisals, 188

BA Film and TV Awards, 37C
Balanced science, 61L
Biamperometric determination of copper, 115
Biochemical careers, 163C
Biotechnology in schools, 40
Bonding of nitrate anion, 78
Book reviews
  A-level, 157, 189
  Assessment of practicals, 74
  Biochemistry, 189
  Biological chemistry, 125
  Biotechnology, 125
  Borodin, A.P., biography, 189
  Colloidal systems, 188
  Coordinated science, 187
  Electroanalytical chemistry, 158
  Elements, 187
  GCSE texts, 28, 62, 74, 157, 189
  General chemistry, 62, 70
  Learning in science, 69
  Lecture demonstrations, 72
  Mass spectrometry, 72
  Microcomputer applications, 70
  NMR, 72
  Nuffield Coordinated Science, 28
  Organic chemistry, 62
  Organotransition metal chemistry, 72
  Physical chemistry, 28
  Physical organic chemistry, 157
  Problem solving, 28, 125
  Safety, 69, 70
  Salters' chemistry, 158
  Samples and standards, 72, 74
  Spectroscopy, 69
  Statistical mechanics, 28
  Voltammetric methods, 189
Bromine, production in Israel, 9

C-13 shifts, calculation of, 23
Cambridge Computers Z88, 15
Careers, 34C, 104
Catalyst, 4C
ChemEd '89, 162C
Chemical Industry Education Centre, York, 4C
Chemical industry, recruitment, 34C
Chemical warfare, 68C
Chemistry as separate science, 138, 166L
Chemistry teacher recruitment, 124L
Chemistry, reasons for studying, 128
China, chemistry teaching in, 124L, 134L
CIEC, 4C
Computers in the classroom, 16
Contact process, centenary, 35C
COSHH regulations, 39, 100C

Data collection in laboratory, 148
Dead Sea, chemicals production, 9
Derwentwater Orefield, field work, 41
Distillates, 26, 91, 154

Egg races, chemical, 88
Electric vehicles, 174
Electrochemistry, 174
Energy barriers and molecular structure, 118
Enthalpy of formation, 183L
Environmental Database, National, 133C
Enzymes, immobilised, 179
Essential Chemistry, 37C
European chemical education, 2C
Expert systems, 111

Francium, discoverer of, 135
Fuel cells, 174
Fume cupboards, 61L
Fusion, cold nuclear, 102

GCSE chemistry, future, 138, 166L
Goldsmiths' industry study tours, 131C
Goodyear, Charles, 167
Greenhouse effect, modelling, 75

Hazardous substances, COSHH regulations, 39
Higher education, funding, 66C
History of chemistry, 58, 120
Hunt, Andrew, 130C
Hydrogen chloride, reaction with transition metals, 53

ICI Fellowships, 165C
Immobilised enzymes, 179
Industrially-based resources for Standard Grade, 67C
International Conference on Chemical Education, 162C
Iodine clock, oscillating, 46
Israel, science education, 9

Johnson Matthey Laboratory, Imperial College, 36C

Kekulé, 60L

Lake District, chemistry in, 41
Lecture demonstrations, 60L
LHASA, 150

Mendeleev, D.I., 163C
Microcomputer interfacing, 148
Microcomputer, simulation of greenhouse effect, 75
Microcomputers in schools, 165C
Microcomputers, CAL, 150
Microcomputers, calculation of C-13 shifts, 23
Microcomputers, expert systems, 111
Microcomputers, molecular graphics, 19
Microcomputers, simulation of reaction rates, 22
Microcomputers, use of spreadsheets, 143
Microcomputers, molecular mechanics, 140
Micros, in the classroom, 16
Molecular graphics, 19
Molecular mechanics on BBC micro, 140
Museums, new exhibitions, 5C

National curriculum, 93L
National curriculum and A-level, 94L, 134L
National curriculum, weighting of targets, 131C
National environmental database, 133C
Neris, 6
Nitrate anion, bonding considerations, 78
NMR spectroscopy, types of hydrogen, 85
NMR, computer simulation, 23
Norwich science olympiad, 132C

On-line information, 6
Open Forum, 165C
Orbital energies, 183L
Ores, field work, 41
Organic synthesis, computer assisted learning, 150
Oscillating reactions, 46
OU TV Guide, 30
Ozone layer, 61L

Perey, Marguerite, 135
Periodic table, 61L, 94L, 110, 177, 183L
Phase change in silver iodide, 113
Primary science, 164C
Problem solving, egg races, 88

Radioactive decay, 166L
Reaction rates, simulation, 22
Recruitment into chemical industry, 34C
Research in the sixthform, 49
Resources database, 6
Role play, 106
RSC A-level core, 163C
RSC Annual Congress, Hull, 98C
RSC Chemical Education Award, 130C
Rubber, vulcanisation, 167

Salters' advanced chemistry, 3C
SATIS, 130C
Science olympiad, Norwich, 132C
Scotland, 16-plus action plan, 83
Shaw Medal, 61L
Shaw, Lt Col Dr B., 60L
SIFT, 55, 122, 185
Silver iodide, phase change, 113
Simulation, greenhouse effect, 75
Simulation, laboratory, titanium (IV) oxide, 51
Sinclair Spectrum, molecular graphics on, 19
Sixthform research, 49
Software reviews
  Industrial Chemistry, 158
Solid state phase change, 113
Sonochemistry, 13
Spreadsheets, use in teaching, 143
Standard molar volume, 183L
Standard states, choosing, 108
Stoichiometry, 8L, 93L
Stone report, 2C
Supersaturation, 24

Teaching techniques, role play, 106
Temperature, effect on reaction rates, 22
Temperature, standard, 93L, 134L
Titanium (IV) oxide, simulation, 51
Titration complexometric, 115
Titration, biamperometric determination of copper, 115
Transition metals, reaction with hydrogen chloride, 53
Turning on, 128

UKAEA competition, 99C
Ultrasonics in chemistry, 13
Universities and A-levels, 171
University chemistry, Stone report, 2C

Vulcanisation of rubber, 167

Wessex Project, 8L
Women chemists, 66C, 135

Zinc-air cell, 174


**Key**

C - Column
L - Letter to the editor

## Authors


Adloff, J.P., 135
Akeroyd, M., 93L
Allsop, T., 124L
Andrews, S., 183L
Aruga, R., 108

Berry, M., 94L
Berry, R.W.H., 60L
Best, P.H., 124L
Bethell, A., 124L
Bickerton, J.C., 113
Bond, P.M., 174
Borrows, P., 88, 166L
Brightwell, J.W., 113
Brown, T.M., 49
Bullock, C., 179
Burnham, D.J., 150

Cartwright, H.M., 46
Chapman, A., 41
Clayton, D.G., 93L
Cooksey, C.J., 49
Cooper, D., 75
Cotton, S., 133C

Douek, J., 2C
Dronsfield, A.T., 49
Dryburgh, P.M., 24

Elsworth, J.F., 110

Farley, H.A., 46
Faust, C.B., 134L, 138
Formosinho, S.J., 118
Freestone, N., 26, 58, 91, 120, 154

Gadd, K.F., 8L

Haines, A.H., 140
Hoare, A., 61L
Holloway, J.H., 60L
Holman, J., 3C
Huddleston, P.R., 23, 111
Hughes, I., 19

Jianru, C., 134L
Johnson, D., 61L

Kauffman G.B., 135, 167
Kipling, B., 60L

Labdon, D.H., 8L
Laing, M., 177, 183L
Leharne, S., 143
Little, R., 41
Lorimer, J.P., 13

Mansoor, S.A., 115
Mapletoft, M., 106
Marshall, R.A.G., 183L
Mason, T.J., 13
McGuffin, S.J., 61L
Mellows, R.M., 51
Metcalfe, E., 143
Mingrong, C., 134L
Mitchell, L.B., 166L
Moorhouse, J.P., 13

Nelson, P.G., 8L, 183L
Nicholson, J., 134L
Nuttall, S., 61L

Palmer, T.F., 61L
Patel, M., 34C
Perry, C.J., 171
Plackett, J.D., 93L
Pritchard, D.R., 83
Pryce-Jones, T., 174

Reed, N., 131C
Riggs, A., 40
Riyazuddin, P., 115
Rothchild, R., 85

Scerri, E.R., 94L, 183L
Scibeci, R.A., 16
Simons, J.P., 61L
Stevenson, R., 3C, 6C
Sutherland, D., 148

Tang, Y-Z., 93L
Tawney, D.A., 39
Travis, A., 9

Usha, V., 115

Varandas, A.J.C., 118
Venkatasubban, K.S., 85

Willey, G.R., 78
Williams, D.A.R., 150
Willson, J.S., 94L
Winter, R.D., 53
Withers, M., 102
Wood, J.A., 22
Woods, G., 163C
Worley, R., 128

Yinghao, L., 134L
Yongxing, W., 134L

# Education in Chemistry - Index 1989

## Subject


16-19 science, Royal Society meeting, 38C
16-plus action plan in Scotland, 83
2066 competition, 99C

A-level chemistry, 171
A-level core, RSC, 163C
ASE, Birmingham, 35C
Audiovisual reviews
  Film and video appraisals, 188

BA Film and TV Awards, 37C
Balanced science, 61L
Biamperometric determination of copper, 115
Biochemical careers, 163C
Biotechnology in schools, 40
Bonding of nitrate anion, 78
Book reviews
  A-level, 157, 189
  Assessment of practicals, 74
  Biochemistry, 189
  Biological chemistry, 125
  Biotechnology, 125
  Borodin, A.P., biography, 189
  Colloidal systems, 188
  Coordinated science, 187
  Electroanalytical chemistry, 158
  Elements, 187
  GCSE texts, 28, 62, 74, 157, 189
  General chemistry, 62, 70
  Learning in science, 69
  Lecture demonstrations, 72
  Mass spectrometry, 72
  Microcomputer applications, 70
  NMR, 72
  Nuffield Coordinated Science, 28
  Organic chemistry, 62
  Organotransition metal chemistry, 72
  Physical chemistry, 28
  Physical organic chemistry, 157
  Problem solving, 28, 125
  Safety, 69, 70
  Salters' chemistry, 158
  Samples and standards, 72, 74
  Spectroscopy, 69
  Statistical mechanics, 28
  Voltammetric methods, 189
Bromine, production in Israel, 9

C-13 shifts, calculation of, 23
Cambridge Computers Z88, 15
Careers, 34C, 104
Catalyst, 4C
ChemEd '89, 162C
Chemical Industry Education Centre, York, 4C
Chemical industry, recruitment, 34C
Chemical warfare, 68C
Chemistry as separate science, 138, 166L
Chemistry teacher recruitment, 124L
Chemistry, reasons for studying, 128
China, chemistry teaching in, 124L, 134L
CIEC, 4C
Computers in the classroom, 16
Contact process, centenary, 35C
COSHH regulations, 39, 100C

Data collection in laboratory, 148
Dead Sea, chemicals production, 9
Derwentwater Orefield, field work, 41
Distillates, 26, 91, 154

Egg races, chemical, 88
Electric vehicles, 174
Electrochemistry, 174
Energy barriers and molecular structure, 118
Enthalpy of formation, 183L
Environmental Database, National, 133C
Enzymes, immobilised, 179
Essential Chemistry, 37C
European chemical education, 2C
Expert systems, 111

Francium, discoverer of, 135
Fuel cells, 174
Fume cupboards, 61L
Fusion, cold nuclear, 102

GCSE chemistry, future, 138, 166L
Goldsmiths' industry study tours, 131C
Goodyear, Charles, 167
Greenhouse effect, modelling, 75

Hazardous substances, COSHH regulations, 39
Higher education, funding, 66C
History of chemistry, 58, 120
Hunt, Andrew, 130C
Hydrogen chloride, reaction with transition metals, 53

ICI Fellowships, 165C
Immobilised enzymes, 179
Industrially-based resources for Standard Grade, 67C
International Conference on Chemical Education, 162C
Iodine clock, oscillating, 46
Israel, science education, 9

Johnson Matthey Laboratory, Imperial College, 36C

Kekulé, 60L

Lake District, chemistry in, 41
Lecture demonstrations, 60L
LHASA, 150

Mendeleev, D.I., 163C
Microcomputer interfacing, 148
Microcomputer, simulation of greenhouse effect, 75
Microcomputers in schools, 165C
Microcomputers, CAL, 150
Microcomputers, calculation of C-13 shifts, 23
Microcomputers, expert systems, 111
Microcomputers, molecular graphics, 19
Microcomputers, simulation of reaction rates, 22
Microcomputers, use of spreadsheets, 143
Microcomputers, molecular mechanics, 140
Micros, in the classroom, 16
Molecular graphics, 19
Molecular mechanics on BBC micro, 140
Museums, new exhibitions, 5C

National curriculum, 93L
National curriculum and A-level, 94L, 134L
National curriculum, weighting of targets, 131C
National environmental database, 133C
Neris, 6
Nitrate anion, bonding considerations, 78
NMR spectroscopy, types of hydrogen, 85
NMR, computer simulation, 23
Norwich science olympiad, 132C

On-line information, 6
Open Forum, 165C
Orbital energies, 183L
Ores, field work, 41
Organic synthesis, computer assisted learning, 150
Oscillating reactions, 46
OU TV Guide, 30
Ozone layer, 61L

Perey, Marguerite, 135
Periodic table, 61L, 94L, 110, 177, 183L
Phase change in silver iodide, 113
Primary science, 164C
Problem solving, egg races, 88

Radioactive decay, 166L
Reaction rates, simulation, 22
Recruitment into chemical industry, 34C
Research in the sixthform, 49
Resources database, 6
Role play, 106
RSC A-level core, 163C
RSC Annual Congress, Hull, 98C
RSC Chemical Education Award, 130C
Rubber, vulcanisation, 167

Salters' advanced chemistry, 3C
SATIS, 130C
Science olympiad, Norwich, 132C
Scotland, 16-plus action plan, 83
Shaw Medal, 61L
Shaw, Lt Col Dr B., 60L
SIFT, 55, 122, 185
Silver iodide, phase change, 113
Simulation, greenhouse effect, 75
Simulation, laboratory, titanium (IV) oxide, 51
Sinclair Spectrum, molecular graphics on, 19
Sixthform research, 49
Software reviews
  Industrial Chemistry, 158
Solid state phase change, 113
Sonochemistry, 13
Spreadsheets, use in teaching, 143
Standard molar volume, 183L
Standard states, choosing, 108
Stoichiometry, 8L, 93L
Stone report, 2C
Supersaturation, 24

Teaching techniques, role play, 106
Temperature, effect on reaction rates, 22
Temperature, standard, 93L, 134L
Titanium (IV) oxide, simulation, 51
Titration complexometric, 115
Titration, biamperometric determination of copper, 115
Transition metals, reaction with hydrogen chloride, 53
Turning on, 128

UKAEA competition, 99C
Ultrasonics in chemistry, 13
Universities and A-levels, 171
University chemistry, Stone report, 2C

Vulcanisation of rubber, 167

Wessex Project, 8L
Women chemists, 66C, 135

Zinc-air cell, 174


**Key**

C - Column
L - Letter to the editor

## Authors


Adloff, J.P., 135
Akeroyd, M., 93L
Allsop, T., 124L
Andrews, S., 183L
Aruga, R., 108

Berry, M., 94L
Berry, R.W.H., 60L
Best, P.H., 124L
Bethell, A., 124L
Bickerton, J.C., 113
Bond, P.M., 174
Borrows, P., 88, 166L
Brightwell, J.W., 113
Brown, T.M., 49
Bullock, C., 179
Burnham, D.J., 150

Cartwright, H.M., 46
Chapman, A., 41
Clayton, D.G., 93L
Cooksey, C.J., 49
Cooper, D., 75
Cotton, S., 133C

Douek, J., 2C
Dronsfield, A.T., 49
Dryburgh, P.M., 24

Elsworth, J.F., 110

Farley, H.A., 46
Faust, C.B., 134L, 138
Formosinho, S.J., 118
Freestone, N., 26, 58, 91, 120, 154

Gadd, K.F., 8L

Haines, A.H., 140
Hoare, A., 61L
Holloway, J.H., 60L
Holman, J., 3C
Huddleston, P.R., 23, 111
Hughes, I., 19

Jianru, C., 134L
Johnson, D., 61L

Kauffman G.B., 135, 167
Kipling, B., 60L

Labdon, D.H., 8L
Laing, M., 177, 183L
Leharne, S., 143
Little, R., 41
Lorimer, J.P., 13

Mansoor, S.A., 115
Mapletoft, M., 106
Marshall, R.A.G., 183L
Mason, T.J., 13
McGuffin, S.J., 61L
Mellows, R.M., 51
Metcalfe, E., 143
Mingrong, C., 134L
Mitchell, L.B., 166L
Moorhouse, J.P., 13

Nelson, P.G., 8L, 183L
Nicholson, J., 134L
Nuttall, S., 61L

Palmer, T.F., 61L
Patel, M., 34C
Perry, C.J., 171
Plackett, J.D., 93L
Pritchard, D.R., 83
Pryce-Jones, T., 174

Reed, N., 131C
Riggs, A., 40
Riyazuddin, P., 115
Rothchild, R., 85

Scerri, E.R., 94L, 183L
Scibeci, R.A., 16
Simons, J.P., 61L
Stevenson, R., 3C, 6C
Sutherland, D., 148

Tang, Y-Z., 93L
Tawney, D.A., 39
Travis, A., 9

Usha, V., 115

Varandas, A.J.C., 118
Venkatasubban, K.S., 85

Willey, G.R., 78
Williams, D.A.R., 150
Willson, J.S., 94L
Winter, R.D., 53
Withers, M., 102
Wood, J.A., 22
Woods, G., 163C
Worley, R., 128

Yinghao, L., 134L
Yongxing, W., 134L